

Date: Tue, 30 Mar 93 12:01:57 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #395  
To: Info-Hams

Info-Hams Digest                      Tue, 30 Mar 93                      Volume 93 : Issue    395

Today's Topics:

        "Technician" class means what?  
        2m antenna for minivan: Recommendations?  
        Another 3rd Party Question  
        Autopatch  
        Aviation use of Amateur Radio  
        Building Shortwave Antennae  
        Contest is Okay  
    Looking For Information On Atlas 210-X Transceiver  
        New radios (to N. American hams)  
        Wanted: thoughts on glass mount ants

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 30 Mar 93 16:00:32 GMT  
From: topaz.bds.com!topaz.bds.com!ron@uunet.uu.net  
Subject: "Technician" class means what?  
To: info-hams@ucsd.edu

>> [Comments as to the reason there is no FCC license class Tech+ because of  
>> software inadequacies in Gettysburg...]

> I believe you're wrong.

Nope he's right. The original no-code proposal was to make a new "Tech"  
like license and to appease anti-no-coders in the league, it wasn't to  
have 2m either. By the time it got down to reality time, the lack of the

ability to add another license class to the FAA computer meant the choice of eliminating either the existing TECH or the existing NOVICE to make room for the nocode tech. The clear advantage was eliminating the existing TECH while providing a loop hole for old-techs and new techs who either took 5WPM code or upgraded from novices to operate on the Novice band. Note that the ability of TECHS to operate the novice freqs is a fairly recent development (late seventies?).

>> to upgrade from where you are, code or no code, you have to pass 13 WPM, so  
>> it's not important to the examiners to know if you have 5WPM credit.

> I think you're incorrect here: to upgrade from "No HF privileges" to  
> "HF Novice Privileges", a "Tech" would have to pass element 1A (5 wpm).

I think we're quibbling over the word "upgrade" here. As far as the FCC is concerned, adding TECH+ to TECH is not an upgrade. There is only one license class Technician. You just need to have done 5WPM in order to use the TECHNICIAN class HF Privs.

The point he was making is to upgrade to any other license class, you don't need to show that you ever passed \*5WPM\* because you don't have to pass the code tests incrementally like you do the written. If you walk in and pass 1C (20 WPM) you never have to take a code test again. Even though you have to work your way through all the writtens for whatever license class you want to end up with (2, 3A, 3B, 4A, 4B).

-Ron

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Date: Tue, 30 Mar 1993 18:07:17 GMT  
From: usc!zaphod.mps.ohio-state.edu!pacific.mps.ohio-state.edu!linac!att!cbnews!  
wx4d@network.UCSD.EDU  
Subject: 2m antenna for minivan: Recommendations?  
To: info-hams@ucsd.edu

I am installing a 2-meter rig in a Voyager minivan.

Can anyone make a recommendation about antenna installation ? It's a relatively new vehicle, and therefore, I'm reluctant to drill a hole in the body. There's no lip for a trunk-mount; I think I'm down to the on-glass antenna types.

The only two locations I can envision mounting this type of antenna are on the windshield, near the top of the passenger side, or on one of the large window panels on the side. The glass is somewhat curved on the windshield, and the side panels pop in and out at the rear. I believe the rear-window defroster wires are too close to the top for mounting on

the rear glass.

The van is taller than an ordinary car, and I'm a little concerned about overall height.

I'd appreciate very much hearing from anyone who has put an antenna on a minivan: where you put it, how it works, and generally any good/bad things learned from the experience.

Thanks & 73,

Jim Morgan WX4D  
jvm@aluxpo.att.com

-----  
Date: Tue, 30 Mar 1993 15:55:10 GMT  
From: usc!sdd.hp.com!swrinde!emory!kd4nc!ke4zv!gary@network.UCSD.EDU  
Subject: Another 3rd Party Question  
To: info-hams@ucsd.edu

In article <1993Mar30.073714.23515@usl.edu> cfm1471@ucs.usl.edu (Morrison Charles F) writes:

>  
>How come since before W.W. 1, the United States has been great allies with  
>both the French as well as the British, and there is NO 3rd party agreement?  
[delete]  
>What is the process? I speak with British hams all the time, whats to  
>hurt if i send traffic to a friend in England, thats not a ham. Am i  
>not supposed to reveal matters of military intelligence?

Charlie, the problem is not possible leakage of military secrets. The problem is that the phone companies of European nations are government owned and they are loath to forgo the revenue that they collect for international calls. It's really that simple, they don't want any non-governmental competition, however small, to their money machines. It's at the insistence of these government owned PTTs that most of the third party rules exist in amateur radio.

Gary

--  
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | |

Date: Tue, 30 Mar 1993 14:31:13 GMT  
From: usc!zaphod.mps.ohio-state.edu!swrinde!emory!kd4nc!ke4zv!  
gary@network.UCSD.EDU  
Subject: Autopatch  
To: info-hams@ucsd.edu

In article <1308@arrl.org> lhurder@arrl.org (Luck Hurder KY1T) writes:  
>In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:  
>>  
>>Well it's legal for the user to ID the machine as well as his own  
>>station by doing a network ID at the required intervals. The poster  
>>was describing a \*remote base\*, not a repeater operating under  
>>automatic control.  
>>  
>  
>'Scuse me? "Remote Base"? Try finding those words in part 97 - you won't.  
>  
>Which brings it back to either being a station in repeater operation or  
>auxiliary operation. One or the udder...

Remote base is a colloquialism used mainly on the West Coast. In the rules it's covered in 97.213 under remote control of a station. The control link must be operated in auxiliary service, but the station being remoted is not in auxiliary service. It operates under ordinary amateur rules, aside from a 3 minute control loss timer requirement, and a requirement to post a photocopy of the station license at the remote station.

The reason these personal patches aren't repeaters is that they don't repeat anyone's radio signals. Personal patches could be considered auxiliary operation, but they don't have to be operated that way. They can also be operated as remote stations under third party rules. That requires operation above 222 MHz, or a separate control transmitter and receiver operating above 222 MHz, though, so it's not terribly practical. Operating them as straight auxiliary stations, above 222 MHz, is clearly the simplest choice.

In any event, network IDing is legally acceptable, though cumbersome.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

-----  
Date: 30 Mar 1993 16:45:25 GMT  
From: topaz.bds.com!topaz.bds.com!ron@uunet.uu.net  
Subject: Aviation use of Amateur Radio  
To: info-hams@ucsd.edu

Somebody about a week ago asked about being able to talk to a relative who flies transoceanic for one of the major airlines (which today announced they are laying off a bunch of pilots, hopefully not him). I at the time pointed out that operating amateur radio on the plane's aviation frequency HF rig (frequently able to be tuned into the amateur bands) would not be kosher, the rules require a separate radio installation.

I got several show me the regs or shut-up responses. I long ago learned that though I had a fairly good memory for these things, I had better get the facts exactly right or face a hundred people who will snidely correct tiny inaccuracies in my postings. As a result I've had a copy of the FAR's (FAA Regulations) next to my workstation. It took me a while to dig out my Part 97 from home and look this issue up, but here it is from the FCC regs:

#### 97.11 Stations aboard ships or aircraft.

- (a) The installation and operation of an amateur station on a ship or aircraft must be approved by the master of the ship or pilot in command of the aircraft.
- (b) The station must be separate from and independent of all other radio apparatus installed on the ship or aircraft, except a common antenna may be shared with a voluntary ship radio installation. The ship's transmissions must not cause interference to any other apparatus installed on the ship or aircraft.
- (c) The station must not constitute a hazard to the safety of life or property. For a station aboard an aircraft, the apparatus shall not be operated while the aircraft is operating under Instrument Flight Rules, as defined by the FAA, unless the station has been found to comply with all applicable FAA Rules.

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The last sentence I suspect is a cross reference to 91.21, which we have to death here already.

-Ron  
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Date: Tue, 30 Mar 1993 15:38:27 GMT  
From: usc!sdd.hp.com!swrinde!emory!kd4nc!ke4zv!gary@network.UCSD.EDU  
Subject: Building Shortwave Antennae  
To: info-hams@ucsd.edu

In article <pascalC4nuAo.8o3@netcom.com> pascal@netcom.com (Richard Childers) writes:

>  
>I have an Allied SX-190 I picked up at an IEEE flea market a few years ago,  
>which I'm dusting off to use for code practice ( so I can finally get my  
>amateur license - hopefully, Tech-plus, to start ).  
>  
>I have a few books on antennas, but am looking for practical knowledge. The  
>radio has a coax screw-on jack on the back for the antenna feedline, and is  
>described in the manual as being 50 to 75 ohms, unbalanced. My brother - who  
>has an Advanced license - made an antenna, a few years ago, out of a few  
>dozen feet of copper wire, one end attached to the center of the jack. Now,  
>I'm trying to make a better antenna. My brother's previous design now seems  
>questionable - shouldn't the antenna have been center-tapped, instead of  
>tapping it at one end ... and shouldn't it have had a complementary element  
>attached to the ground side of the coax jack ?

Your brother's design was what's called an "end fed" random wire antenna. These are used quite frequently in amateur and SWL service. The antenna wouldn't likely present a 50 ohm match to the radio without the addition of a matching network, but for receiving at HF it isn't as critical to have a matched feed as it would be for weak signal work at VHF and above because signal levels have to be fairly strong at HF since atmospheric and manmade noise is also strong. The strong noise sources would mask any weak signals present. Matching gives maximum power transfer, but receivers often have excess gain, so less than optimum matching will often suffice. In this case, the old Allied radio can use some help at upper HF, so a matching network and/or a preamp might be helpful for 15 and 10 meter operation.

Alternatively, a better antenna, one that's resonant and matched for the band of interest, would also help in this case. For unbalanced antennas like the end fed random wire, a ground connection is of great advantage. For a balanced resonant antenna, like a dipole, a ground connection is optional (for protective rather than performance reasons).

>The radio in question is designed to receive frequencies that range from 3.5  
>through 27 MHz. I wandered into Radio Shack and bought two spools of 30 AWG  
>enamel-coated wire, each of them 200 feet in length. According to my calcul-  
>-ations, 200 feet translates into a half-wave element tuned to the frequency  
>of 2.34 MHz. Then I went across the street to Woolworth's and bought a pair  
>of styrofoam toroids ( left over from Christmas wreath-making ). I took these  
>items home, and, taking one of the spools, I wrapped 200 feet of wire around  
>the toroid, fairly evenly distributed ( although nowhere perfectly so ), and

>taped the far end down with electrical tape. I left about three inches out,  
>and wrapped the toroid in a layer of electrical tape, for insulation. Then I  
>did the same thing with the other spool of wire, leaving an equivalent short  
>length of wire for connections, wrapping the rest of it around in the reverse  
>direction, anchoring the far end and again wrapping it in electrical tape for  
>insulation and longevity.

>

>As I understand antenna theory, I can now delicately solder these two thin  
>strands of wire to, um, tip and ring, as it were, of some 75-ohm coax, and  
>use this as a feedline to carry signals to the back of the receiver, and I  
>will have a bidirectional loop antenna, connecting the other ends of the  
>coax to the center and the ground, respectively, of the jack. Is this right ?

Well not quite. By coiling the wire, the formula:  $\text{wavelength} = 300/\text{freq (MHz)}$  doesn't work anymore. The coil you have formed has more inductance than a straight piece of wire, and more distributed capacitance. Thus it's resonant frequency will differ from a straight wire. In addition, loop antennas are normally closed. That is to say, the loop is a balanced antenna with both ends of the coil attaching to a tuning network or radio, not two coils each connected at only one end. What you have instead is an extremely shortened coil loaded dipole. Short loaded dipoles usually do not perform as well as straight wire antennas. That's because of several factors. One factor is that the antenna's "capture area" is reduced. That means it intercepts less of the wave because it isn't physically present over much of the wavefront. That in turn means that a smaller amount of energy is coupled to it by the wave and the signal you receive will be weak. Another reason is the coil Q will be such that there will be significant resistance losses in proportion to the captured signal strength. This is not a good antenna design.

You didn't say if you wound the wire around the circumference of the toroids to form a large multi-turn loop, or whether you wound the wire "toroid style" around the styrofoam. If it's the latter, a toroid wound coil is a shape that \*minimizes\* coupling with wavefronts, so you don't have much of an antenna at all. If the former, you have primarily magnetic coupling. That's not necessarily a bad thing if the loop is tuned, which yours is not. You'd have a nicely directional antenna that is largely immune to radiated electrical noise. It won't be very good for receiving weak signals, but we've already covered the fact that weak signal capture isn't critical for most HF reception.

The opposite of a magnetic loop is the voltage probe antenna. Again it is physically small, and high impedance. It picks up the E field of the wave while neglecting the magnetic component. For the strongest signals, you want to pick up both the E field and the magnetic field, and in the proper phase relationship. In general terms, that usually means a lineal antenna whose physical size matches the size of the wavefront.

>The receiver has what I think is a tuning coil, what's called a preselector  
>on the front panel. Should I add another one outside the radio, for better  
>tuning, or is the tuning capacitor within the radio suitable to the range of  
>frequencies this radio is designed to receive ?

The preselector in the radio is to add selectivity to the receiver front end. It's there primarily to reject strong signals outside the band of interest, not to match the antenna. The type of antenna you've built, a magnetic loop we hope, will need tuning for best performance. That will require an external tuning and matching network. The way you have it configured now is not good. Instead you want to take \*one\* loop and match it's ends to the radio.

>Would it be better if I custom-built an antenna for each band ( 3.5, 4.7, 5.7,  
>7.0, 9.5, 11.5, 14.0, 15.0, 17.5, 21.0, 27.0 MHz ) ? I guess I could attach  
>them to a broomstick and just face the antenna array en masse ( or buy a real  
>antenna, but I'm looking for portability and education here ).

Antennas of small physical size, as referenced to the size of the wavefront, usually have a very narrow bandwidth over which they have usable performance. Thus you will need to either build custom loops for each segment of HF, and/or have a tuning mechanism for the antennas.

These types of antennas are rather advanced, most of us just throw up straight wire antennas. They can be fun to tinker with for specific purposes, however. The ARRL Antenna Book has a chapter on loop antennas that should lead you in the right direction. There are lots of drawings which say what can't be covered here by volumes of text.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Tue, 30 Mar 1993 19:58:43 GMT

From: pa.dec.com!nntpd2.cxo.dec.com!10540.enet.dec.com!jepsen\_st@decwrl.dec.com

Subject: Contest is Okay

To: info-hams@ucsd.edu

>>>But the WPX contest has me worried... the HF phone bands are one big  
>>> etc. etc. etc. etc.

>>Contesting is as valid a use of the amateur bands as rag chewing, net  
>>operations, etc. If it doesn't appeal to you, fine, do something else.



>> etc. etc. etc. etc.

>I really enjoy hunting DX during the WPX and the other world wide contests.  
>However the bands are a shared resource and I don't believe that anyone  
>or group should hog the whole band during a extended period of time. They  
>could very easily stay in certain portions of the bands and let us non-  
>contesters enjoy our ragchews, nets, etc... I believe someone made a  
>petition to the FCC tht would enforce this, don't know what happened  
>to it. I do suspect that if they opened it up for public comment that  
>they would be flooded with support for limiting the contesters. I have  
>noticed some of the newer contests saying in the rules that the contest  
>is limited to certain parts of the bands. This seems like a reasonable  
>compromise. 73!

Yes the bands are a shared resource. Let's see there are probably 10 big  
contest a year. Some of them are 48 hours long. Thats about 20 days a year.  
20 days out of 365 days  $(20/365)=5\%$ .

How about 80m check-in nets. Lets see they're on the entire 80 phone  
band from 6PM to 9PM (west coast time) 7 days a week. That 3 hours a day  
for 365 day a year  $(3*365)=1095$  hours. At 24 hours per day that's  $(1095/24)=45.63$   
days a year. So at 45 days a year  $(45/365)=12\%$ .

Contesting uses about 5% of our resources, not exactly an unfair share,  
in my opinion.

Regarding limiting contests to certain band segments. It's not a bad idea  
just not practical. What part of 80m do you set aside for contest? The  
DX window or net alley. How about 40m, the usable phone portion of 40  
is small already. Then there's 20m, etc. etc.  
I dare you or anyone to draw up a plan that won't alienate some large group  
or the other.

Contesting doesn't appeal to everyone, neither does DXing or Traffic nets  
or (your choice here). That doesn't mean it's not a fair, valid use of the  
amateur bands.

Steve...AI7W

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Date: Tue, 30 Mar 1993 17:47:41 GMT  
From: noc.near.net!inmet!ringo!sheri@uunet.uu.net  
Subject: Looking For Information On Atlas 210-X Transceiver  
To: info-hams@ucsd.edu

Hi! My father is a ham radio operator, and he has come across  
an Atlas 210-X transceiver. He's looking for a schematic for it,

or an owner's manual, or any information at all!

\*\* Please email to sherj@inmet.com. \*\*

If this isn't the correct notesfile for this sort a thing, please let me know that as well.

Thanks alot! :-)

-Sherj

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Date: Tue, 30 Mar 1993 19:04:13 GMT

From: usc!wupost!darwin.sura.net!rouge!jpd@network.UCSD.EDU

Subject: New radios (to N. American hams)

To: info-hams@ucsd.edu

I was browsing a copy of "CQ Ham Radio", March 93, which is a Japanese magazine, for the new equipment that might be available in Japan, but not here. This is what I found.

Kenwood TH-7

This is a new dual band HT that looks just like a Motorola flip cell phone. It is 2M/70 cm, but here is the interesting part. It appears that it is a 100mW unit that is for the express purpose of full duplexing with a full duplex dual band mobile. It looks good, and is very small. better yet, list is \$252. May have some other great applications where this low power level is satisfactory.

Kenwood TM-2400

A new 2.4 GHz mobile in the style of the TM-742. \$1185 (ouch!).

Standard C401

A credit card sized no frills 70cm HT. \$210

Yaseu 305/805

Newly designed full featured single band HT's. Faithful to the new rounded looks of other brands. Sharp looking. \$337/\$355.

Azden PCS-7500

A 6M mobile. While I don't think it is new, it is not available here, and might be attractive to no code techs, or no code advanced class hams like me. \$446.

"CQ Ham Radio" is available from Kinokuniya Book Store, 1581 Webster St. (Japan Town) San Francisco 94115-9948

They will mail order with plastic.

73 de tom  
n5off@w5ddl.aara.org

"When you get to the fork in the road, take it", Yogi Berra.

--  
-- James Dugal, N5KNX Internet: jpd@usl.edu  
Associate Director Ham packet: n5knx @k5arh (land), U0-22 (sat.)  
Computing Center US Mail: PO Box 42770 Lafayette, LA 70504  
University of Southwestern LA. Tel. 318-231-6417 U.S.A.

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Date: Tue, 30 Mar 1993 15:47:50 GMT  
From: usc!sdd.hp.com!swrinde!emory!kd4nc!ke4zv!gary@network.UCSD.EDU  
Subject: Wanted: thoughts on glass mount ants  
To: info-hams@ucsd.edu

In article <drw-290393204254@129.193.144.86> drw@esl.com (Dave Waters) writes:  
>I'd like some comments on the abilities of the glass mount antennas, as  
>opposed to the traditional thru-the-sheet-metal type of antenna. I'm mainly  
>concerned with receive attenuation. I had no problem drilling the roof to  
>pieces in my old truck, but a new van deserves more respect, so the glass  
>mounts would seem to be the answer. Thanks for any comments, positive or  
>negative. I appreciate your experiences!

I've had rather negative experiences with them. The coax is poorly decoupled from the antenna and you wind up with lots of RF in the cab. This is not only a nuisance for EMI pickup, but also can strongly affect the antenna pattern and gain. I've had the whip fall off with negligible performance change(!). Be sure to connect the tab to a good body ground, and route the coax at right angles to the antenna. There will still be shield pickup, but it will be less. There are frequently problems with mount reliability as well, though that can be dealt with if you're careful to \*clean\* the surface much more thoroughly than you'd consider reasonable, and follow the mounting instructions dealing with the adhesive to the letter. I'd rather just drill a hole. If you're going to keep your van, it'll be old someday. Why not get all the use out of it you can in the meanwhile?

Gary

Gary Coffman KE4ZV	You make it,	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	we break it.	uunet!rsiatl!ke4zv!gary
534 Shannon Way	Guaranteed!	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244		

References <drw-290393204254@129.193.144.86>,  
<1993Mar30.152614.20118@mnemosyne.cs.du.edu>, <1p9sklINNem5@west.West.Sun.COM>  
Subject : Re: Wanted: thoughts on glass mount ants

```
>>
>>There's a bunch of folks out there, drill motors and hole saws in hand, just
>>waiting to wreak havoc on your new van's metal, all because they claim that's
>>the only way to go.
>>
>>To them, I politely say: "Bunk!"
>>
>>I'm running an Avanti 440 MHz glass-mount on my Explorer, and it works just
>>fine, thank you. I even switch between a quarter-wave whip in town and the
>>collinear on the road, with no problems. (The quarter-wave shows a 2:1 SWR or
```

I don't think his 1/2 wave glass mount works anywhere near as good as the 5/8 wave mag mount on the roof did. We work a lot of 2 meter simplex and it just ain't as good as it used to be. It appears to be much more directional too.

Besides, with the glass mount right on the rear window of his pickup truck (passenger side) the poor passenger's head is only inches away from the antenna. Ouch!!

Paramax Systems Corporation - a Unisys Company  
Valley Forge Engineering Center - Paoli, Pennsylvania

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Date: Tue, 30 Mar 93 19:16:27 GMT  
From: mnemosyne.cs.du.edu!nyx!jmaynard@uunet.uu.net  
To: info-hams@ucsd.edu

References <1p9sklINNem5@west.West.Sun.COM>,  
<1993Mar30.171217.11783@mnemosyne.cs.du.edu>, <1pa07a\$avc@network.ucsd.edu>/  
Subject : Re: Wanted: thoughts on glass mount ants

In article <1pa07a\$avc@network.ucsd.edu> brian@ucsd.edu (Brian Kantor) writes:  
>It must be a Texas thing. Around here, if anyone had that much love for  
>an inanimate object, most people would pity them and try to get them  
>professional help.

Actually, I've seen comments that Texans love their vehicles more than others;  
it's an outgrowth of simpler times, when one depended on one's horse for one's  
survival. It's damned hard to survive in Texas without a vehicle...

>It's got a handy-dandy genuine laminated-wood-grain masonite gun rack in  
>the back window too, eh?

Nope; that doesn't work too well on Explorers, where the back window opens. I  
haven't seen one for the side window, but I suspect it's available...

--

Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can  
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.

"I can understand if it just won't work but I think locking up my system  
to tell me this is a little excessive." -- Steve Luzynski

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End of Info-Hams Digest V93 #395

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